

CLAIMS

1. System for monitoring the stability status of building structures made of steel, wood, reinforced concrete or other suitable material, characterized in that it comprises, in combination, a management and control station (C) thereto one or more seismic and/or vibrational sensors (S) of known type are connected, respectively calibrated on the band of the yielding characteristic frequencies peculiar to the bearing structure thereon they are fastened, and at least an acoustic and optical signaller (A) which is activated by the management station (C) itself in case said bearing structures are subjected to stresses so as to induce tensions considered dangerous; thus obtaining that, in case of danger, the present personnel could have the time for abandoning the structures which are going to collapse or for intervening if possible.

2. System according to the preceding claim, characterized in that the signals emitted by said vibrational sensors (S) are continuously monitored by the management station (C), by means of connections of known type through wires or radio waves, in order to detect in real time the occurrence of phenomena showing the presence of structural stresses as from the initial phase thereof, during which the tensions which generate the vibratory phenomena have an extent so as not to represent a danger, but however detectable by means of appropriate seismic sensors.

3. System according to anyone of the preceding claims, characterized in that the control station (C) is equipped with means for communicating with the

outside and/or with a broader monitoring network including several building structures, as well as the main offices of firemen, hospitals, police and all those aid and/or security forces which have to 5 intervene in case of emergency and danger for the safety of people or things.

4.. System according to one or more of the preceding claims, characterized in that said seismic sensors (S) are constituted by inertia mechanical 10 accelerometers and/or by piezodynamic sensors able to pick up even the oscillations of the structures and which have a known detection band.

5. System according to one or more of the preceding claims, characterized in that both the single 15 sensors (S) and the station (C) with the alarm signaller (A), are powered by the supply mains and/or by their own battery which guarantees them to operate even in case of power failure.

6. System according to one or more of the 20 preceding claims, characterized in that the vibrational sensors (S) are equipped with thermo-protective cases.

7. Portable device for monitoring the stability status of building structures made of steel, wood, reinforced concrete or other suitable material, 25 characterized in that it comprises at least a seismic and/or vibrational sensor (S) of known type, equipped with means of known type for the calibration thereof on the band of the yielding characteristic frequencies peculiar to the material of the bearing structure 30 whereon it has to be fastened, and at least an acoustic and optical signaller (A) which is activated by the

sensor (S) itself in case the bearing structure itself is subjected to stresses so as to induce tensions considered dangerous; said device being equipped with power batteries.

5 8. Portable device according to the preceding claim, characterized in that it is equipped with a container protecting against the atmospheric agents, apt to protect it against high temperatures as well, for a time sufficient to give the alarm.

10 9. System for monitoring the stability status of building structures made of steel, wood, reinforced cement or other suitable material, characterized in that it comprises, in combination, a management and control station (C) which filters, analyzes and processes the signals received by one or more seismic and/or vibrational sensors (S) of known type, and at least an acoustic and optical signaller (A) which is activated by the management station (C) itself in case said bearing structures are subjected to stresses so as 15 to induce tensions considered dangerous; thus obtaining that, in case of danger, the present personnel could have the time for abandoning the structures which are going to collapse or for intervening if possible.

20 10. System according to the preceding claim, characterized in that in said management and control station (C) the selection of the interesting band and the filtering of the signal received by the sensors (S) take place inside the station itself by means of 25 software or hardware processing.

11. System according to claim 9 or 10,
characterized in that the sensors (S) are simple
microphones.